9825

Premier Desktop Controller

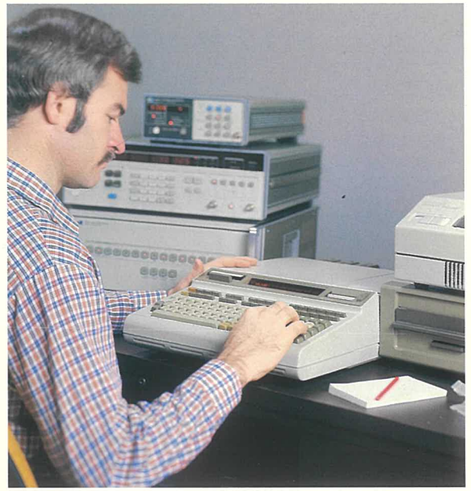
HEWLETT PACKARD

proven

A Common Sense Solution for Data Acquisition and Control Problems

The HP 9825 has the I/O speed of a minicomputer because it was designed and optimized for interfacing, yet it's as easy to use as a desktop computer because it is one.

More than twenty thousand 9825s are being used by scientists and engineers all over the world, and hundreds more are being sold every month. More HP-IB systems are controlled by 9825s than by any other controller. It's an industry standard. As the 9825's reputation continues to grow, more and more people are learning just how fast, easy-to-use, versatile and reliable it is.



250K-Byte magnetic tape cartridge provides dependable mass storage without extra cost.

32-Character alphanumeric display can be programmed to guide an operator with conversational prompts.

Operating system is in ROM, so it doesn't use up read/write memory.

Up to 31K bytes of read/write memory are available for your programs and data.

Vectored interrupt prevents slow devices from slowing down fast ones.

Direct Memory Access (DMA) allows data acquisition at up to 800K bytes per second.

Four read-only memory (ROM) slots make it easy to plug in additional capabilities any time.

Three I/O slots, expandable to 14, provide plug-in simplicity for interfacing peripherals and instruments.

16-Character alphanumeric thermal printer provides low-cost hard copy.

Eight editing keys simplify program changes.

Twelve user-definable Special Function Keys save keystrokes and can alter program flow during execution.

Numeric keypad speeds number entry.

Live keyboard allows you to interrupt program, change variables or do unrelated calculations during execution.

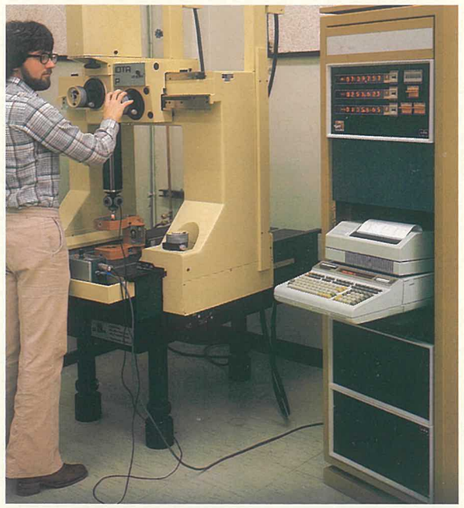
HPL is a storage-efficient, formula-oriented language that executes faster than other high-level, interpretive languages.

fast

Flexible I/O That Puts You in Control

Professional race drivers or photographers usually don't want automatic transmission or automatic exposure. They want manual transmission or manual lens settings that give them more control and faster response for special situations. On the other hand, not very many want to select a collection of parts and assemble a car or camera themselves.

Hewlett-Packard's 9825 Desktop Computer is seen in the same way by people who know data acquisition and instrument control. The 9825 integrates all the essential elements of a computer into a single, compact package that's optimized for measurement and test applications. There are no frivolous bells or whistles — just straightforward procedures for telling the 9825 exactly what you want it to do and when. Special situations and fast response are no problem for the 9825's efficient operating system. You always have control.



A 9825 guides the operator of a coordinate measuring machine through the inspection of a part. The 9825 records measurements, performs calculations and provides a finished report.

A 9825 controls the automated testing of digital voltmeters, acquires test data and prints out results on a peripheral printer.

Buffered I/O lets you communicate efficiently with fast, medium-speed or slow devices.

Direct Memory Access (DMA) can capture real-time data from high-speed devices. Depending on the speed of the external device, this can be done at up to 800K bytes per second.

SPEED LIMIT 800K

Fast read/write allows you to communicate efficiently with medium-speed devices and gives you greater control than does DMA. This can be accomplished at up to 70K bytes per second.

SPEED LIMIT 70K

Formatted read/write provides the most flexible method of communicating with a wide variety of peripherals. You can send completely formatted data at rates up to 16K bytes per second. And for special situations, single-byte input or output can be achieved with a single statement.

SPEED LIMIT 16K

Interrupt permits the 9825 to accomplish other tasks between communications with several independent devices such as printers, plotters and certain measuring instruments that may require attention at unpredictable rates or times. Fourteen channels of vectored interrupt with high and low priorities make it easy to control a wide variety of interrupt situations.

Built-in I/O drivers save you time and trouble. They automatically handle extensive I/O formatting and communications with interface cards, and they give you more than 30 powerful I/O statements that enrich the HPL language. A single statement can initiate data transfer by any of the methods previously described.

Ready-made interface cards save you costly hours of developing your own electronics. The HP-IB card (IEEE 488) provides a common communication code and plug-in compatibility with over 130 HP-IB instruments for stimulus and measurement. Up to 14 devices can be connected to each HP-IB card.

The 16-Bit Parallel card is used for interfacing to some peripherals and to customized electronics.

The BCD card connects the 9825 to many medical, analytical and other instruments with parallel binary-coded decimal output.

The Bit Serial card allows the 9825 to communicate with asynchronous EIA RS-232-C devices such as data terminals and modems.

Up to 14 I/O cards can be connected to one 9825. Three I/O slots are standard, and expanders can increase the capacity to 14.

You can configure a measurement or test system and have it up and running in days instead of weeks. Not only does the 9825 perform I/O operations at high speed, it also accelerates system set-up because so many solutions are built in. You don't have to configure an operating system, write I/O drivers or build interfaces.

easy to use

A Convenient, Expandable System for Innumerable Applicatio

reliable

The 9825 is widely used for testing electronic circuits. It speeds up production economically.

It's easy to operate. The 9825 is ready to start solving your problems as soon as you turn it on. There's no operating system to load and no compiling to do. It points out syntax and typing errors as you make them so you can correct them quickly and easily before you run the program. Conversational prompts on the display can guide an operator smoothly through complex tasks. Special Function Keys with customized overlays can be programmed to let an operator answer questions with single keystrokes or interrupt the program and alter its flow. The overlays can be labeled with terms familiar to the operators.

Software is easy to write, buy and trade. You can learn the HPL programming language quickly from the manuals included with each 9825, or you can take HP customer training courses.

A utilities pack of general-purpose programs is shipped with each 9825. In addition, you can buy software from HP for ac circuit analysis, waveform analysis, linear programming, general statistics, analysis of variance, regression analysis, nonparametrics and stepwise regression.

Through our users' club, you can trade your own software for more than a thousand programs written by other customers.

Many 9825s are employed in the physical and life sciences. Here, a 9825 analyzes data from a gas-chromatograph/mass-spectrometer system.

Read/Write memory is virtually all available to you. Memory options range from 7K to 31K bytes, and the operating system is in a separate read-only memory that uses none of your read/write memory.

With autostart, anyone can operate a 9825. No computer training is needed to put a tape cartridge in the machine and turn it on. That's all it takes to get an operator started. The 9825 can automatically load and run the first program on the tape, and the program can give the operator step by step instructions on the 32-character, alphanumeric display.

Hewlett-Packard has a 40-year reputation for quality and reliability. Not only are our designs tested for thousands of hours during research and prototype stages, but each unit is monitored throughout production and must meet rigid quality control standards. With twenty thousand in use, the 9825 has proven to be a rugged and highly reliable machine. And it's hard to beat for performance.

Hundreds of thoroughly trained service engineers support the 9825. If your machine should ever malfunction, your HP service representative can get it back up and running in a hurry, thus avoiding expensive downtime. Fixed-cost maintenance agreements are available to extend your warranty.

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ROMs offer additional power. The 9825 also offers capabilities for plotters, alphanumeric strings, advanced programming, matrix math, asynchronous terminal emulation and flexible-disc mass storage.

Expand your system easily with plug-in peripherals. HP offers a complete line of peripherals for the 9825 including printers and plotters for reporting and graphics, flexible discs for fast-access mass storage, digitizers, paper tape and card readers and paper tape punches.

Versatile front ends simplify measurement and control. Several card-cage instrumentation subsystems are available from HP along with more than 40 different cards for measurement, test and control tasks such as:

- analog input
- analog output
- digital input
- digital output
- stepper motor control
- interrupt
- timing
- counting

130 HP-IB instruments provide plug-in solutions. The Hewlett-Packard Interface Bus (HP-IB) is much more than just HP's implementation of IEEE Standard 488. It's a decade of experience that can provide the hardware, documentation and support you need to get your system up and running quickly and dependably. HP-IB reaches beyond IEEE-488 to cover the operational area as well as the mechanical, electrical and functional specifications. For example, HP-IB systems incorporate a built-in, high-level, I/O language that saves you the time and expense of writing instrument drivers and configuring operating systems. HP-IB is the shortest path to a measurement system because much of your work has already been done for you.

Several 9825s can be linked to an HP 1000 computer in an efficient, distributed system. Each 9825 can perform local operations, acquire and pre-process data, and send results to the 1000 for incorporation into a central data base. Additional literature on this subject is available from your HP desktop computer representative.

versatile

Applications abound in engineering, science, manufacturing, mathematics and statistics. Here is a sampling of current applications of the 9825. Perhaps you'd like to add yours to the list.

- instrument control
- production control
- process control
- environmental testing
- quality control
- gas chromatography
- mass spectrometry
- electronic scales
- chemical process monitoring
- energy management
- psychological research
- chemical analysis
- critical path planning
- atomic absorption analysis
- transformer design and testing
- biological research
- automatic spotwelding
- automated electroplating
- clinical blood-ion testing
- integrated circuit testing
- testing IEEE-488 interfaces
- tensile strength testing
- aerial photo analysis
- environmental monitoring
- statistical analysis
- numerical analysis
- time series analysis
- mathematical modeling
- analysis of variance
- regression analysis
- engineering design
- civil engineering
- linear programming
- vibration analysis
- appliance testing
- amplifier testing
- numerical control
- waveform analysis
- ac circuit analysis
- PC board testing
- relay testing
- coordinate measuring
- multimeter testing
- oil field analysis

For assistance call the HP regional office nearest you: Eastern 301/258-2000, Midwest 312/255-9800, Southern 404/955-1500, Western 213/877-1282, Canadian 416/678-9430. Or write to Hewlett-Packard, 3404 East Harmony Road, Fort Collins, Colorado 80525; in Europe, Hewlett-Packard GmbH, Desktop Computer Division, Herrenberger Strasse 110, D-703 Boeblingen, Postfach 1430, West Germany; elsewhere in the world, Hewlett-Packard Intercontinental, 3495 Deer Creek Road, Palo Alto, California 94304.

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